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ABSTRACT

The study investigated the number; experience; qualifications; other variables (age, salary, and employment levels); and attrition of special education professional personnel in Michigan. Among findings were that the peak employment of new teachers of mentally handicapped occurred in 1976-77, followed by a drop and leveling of employment in the succeeding 2 years; that over a period of 5 years, there was a permanent or temporary loss of about 50% of the 1973-74 personnel in several categories; and that all beginning teachers employed in 1978-79 for special education assignments had provisional teaching certificates. Tables with statistical data make up more than half of the document. (SBH)

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CERTIFICATION, EMPLOYMENT AND ATTRITION OF SPECIAL EDUCATION PROFESSIONAL PERSONNEL IN MICHIGAN

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At the request of the College and University Delivery System Task Force, the writer submitted a proposal to conduct a study of Special Education professional personnel employed in Michigan Public Schools. The following questions or tasks were posed:

1. How many beginning professional personnel (zero years teaching experience) were newly employed in Special Education assignments in Michigan Public Schools in the 1978-79 school year?

2. How many experienced professional personnel (1+ years teaching experience) were newly employed in Special Education assignments in 1978-79?

3. How many Special Education professional personnel who were employed in 1977-78 returned to Special Education assignments in 1978-79?

4. For each disability category, what were the academic degrees and types of certificates held by persons identified in items 1 and 2 above?

5. For those Special Education professional personnel employed in 1977-78, provide descriptive summaries for each disability category using the following variables:

    a. age distribution
    b. salary distribution
    c. employment levels

d. highest degree achieved

e. type of certificate

6. For each disability category, select the professional personnel employed in 1973-74 and determine the cumulative attrition (loss of professionals for each year through 1978-79).

Procedures:

For information regarding employment, the researcher used computer tape copies of the Michigan Professional Personnel Register for the school years 1973-74, 1974-75, 1975-76, 1976-77, 1977-78, 1978-79. These tapes were provided by the Teacher Preparation and Professional Development Division, Michigan Department of Education.* The Register includes descriptive information about the professional personnel employed in Michigan Public Schools in the following Special Education assignments: mentally handicapped, speech correction, orthopedically handicapped, school social worker, emotionally disturbed, psychologist, homebound, teacher counselor for physically handicapped, education of the blind, education of the deaf, teacher of trainable, consultant for mentally handicapped, learning disabled, occupational therapy.

In dealing with the question of attrition, the researcher used the social security number of each person to determine whether or not he/she returned to a Special Education assignment in Michigan Public Schools.

*Although the raw data were provided by the Division, the writer is responsible for the analysis and interpretation of that data.

For information regarding certification, the researcher used computer tape copies of the Teacher Certification Master File, which were provided by the Teacher Preparation and Professional Development Division, Michigan Department of Education. This file indicates that endorsements for each certified teacher as well as the institution and year when the endorsements were recommended.

The Michigan Department of Education customarily counts the number of provisional certificates and endorsements issued during a fiscal year, e.g., July 1, 1978 through June 30, 1979. However, it takes time to secure, verify, and process the certificate recommendations from each teacher training institution. Since all of the teachers graduating in June 1979 would not be entered into the certification master file until September 1979, the researcher elected to use the calendar year for the count of provisional certificates and endorsements issued.

FORTRAN and STDS programs were used with the conventional statistical programs to collect and analyze the data in order to answer the preceding questions.

*Results:

EMPLOYMENT

Table 1 shows the total number of professional personnel who had either primary or secondary assignments in Special Education each year from 1973-74 through 1978-79. The table shows the number of persons in each category of Special Education, while the number in parentheses shows the annual percent change in

*In this report the term "teacher" is often used to designate professional personnel who are not classroom teachers in the conventional use of that term, e.g. school psychologist, social worker.

number of persons in that category. For example, there were 2,245 teachers of mentally impaired (SA) pupils in 1973-74, and that number increased in 1974-75 to 2,314 teachers, which represented a 3% increase. The total number of teachers in this category has increased each year, with the largest increase occurring in 1976-77 when 2,898 teachers were employed representing an 18% increase over the preceding year. Similar interpretations may be obtained for each row category in Table 1.

Newly employed: Table 2 shows the number of newly employed professional personnel for each category from 1974-75 through 1978-79. There is variation among the categories when peak employment occurred and the extent of subsequent employment. For example, the peak employment of new teachers of mentally handicapped (SA) occurred in 1976-77, followed by a drop and leveling of employment in the succeeding two years. On the other hand, employment of new teachers for learning disabled (SM) peaked in 1975-76 and has continued to increase each year after the drop in 1976-77.

Table 3 provides descriptive statistics for employment of beginning professional personnel (zero years teaching experience) in each category for the 1978-79 school year. Table 4 contains descriptive statistics of newly employed professionals who had previous teaching experience. For each category, the tables show the number of newly employed persons, sex, average age, highest degree, instructional levels, and average salary.

Table 5 provides a similar summary of the characteristics of Special Education professional personnel who were employed in 1977-78. For this group, Table 6 shows the age distribution of persons

employed in each category of Special Education. About 2/3 of these persons were 35 years old or younger and 94% are 55 years or younger. It is clear that there is not a large number of Special Education professional personnel who are over 60 years old and approaching retirement.

Table 7 provides a comparison of the number of Special Education professional personnel who returned from the preceding year and the number of newly employed professional personnel for that year. As the total number of Special Education professionals increased, the total number of returning professionals has also increased. However, the percent of returned professionals in 1977-78 and in 1978-79 was 83% and the percent of newly employed professionals was 18% for both years. This suggests that a balance may have been reached, but two years is not sufficient time to build a great deal of confidence in that impression.

Attrition: Table 8 shows the progressive loss of Special Education personnel who were employed in 1973-74, but who did not return to Special Education assignments in the succeeding years. By 1978-79, almost half of the original 1973-74 staff had left their Special Education assignments. The proportion of the 1973-4 staff departing in successive years (.87, .77, .69, .62, .56) is very close to the annual attrition rates for 1974-75 and subsequent years. The reader should note that these proportions do not include the number of Special Education professional personnel who returned after an absence of one year or more.

Tables 8B and 8C indicate the annual attrition of Special Education professional personnel, but they also include those

persons who returned after an absence of one year or more. As shown in Table 8B, the accumulated percent return of 1973-74 professionals is ".63" rather than ".57" which was indicated in Table 8. This difference is due to the number of persons who left and returned. Line "c" shows that 3,026 of the 1973-4 left teaching, but 2,582 of the 6,889 professionals never returned during the 5-year period. Line "d" states that 201 of the 929 professionals who did not return to Special Education assignments in 1974-5, went instead to general education assignments in Michigan Public Schools.

The data in Table 9 indicate the progressive loss of Special Education professional personnel employed in 1973-74 from various assignments. Over a period of five years, there was a permanent or temporary loss of about 50% of the 1973-74 personnel in several categories, i.e., mentally handicapped (SA), orthopedically handicapped (SC), emotionally impaired (SE), physically impaired (SI), trainable (ST).

Since the category of learning disabled (SM) was not present in the 1973-74 Register, the 1975-76 school year was used as the base year when 651 teachers were employed with that assignment. The proportional loss of these teachers each year was very similar to the annual loss of teachers in the 1973-74 sample.

CERTIFICATION

Initial Certificates Recommended: Table 10 shows the number of initial provisional certificates issued in calendar years 1977 and 1978 for each Special Education category. As shown in the

table, there were decreases of 5% to 14% in areas of speech correction (SB), emotionally impaired (SE), and learning disabled (SM). All other areas reflected an increase in the number of endorsements.

Table 11 indicates the total number of endorsements in each Special Education category recommended by a Michigan College or University in 1978. After the institution name, the next columns show the total number of certificates recommended by the institution for Special Education fields. Table 12 shows the number of initial provisional certificates recommended by each institution in 1978 and the endorsements for newly certified personnel.

Each column with a Special Education code presents the number of endorsements recommended by each Michigan Institution. At the bottom of the column there are totals to indicate the number of endorsements recommended by all Michigan institutions and by all institutions in the United States, including Michigan. This provides a basis for estimating the number of endorsements attributed to institutions outside of Michigan.

Certificates Held By Current Teaching Staff: Table 13 identifies the types of certificates held by teachers employed in 1977-78 in Special Education assignments. Table 14 provides a similar summary of the types of certificates held by experienced teachers newly employed in 1978-79 for Special Education. All beginning teachers (zero years teaching experience) employed in 1978-79 for Special Education assignments had provisional teaching certificates.

Need for Special Education Teachers: The following remarks describe one model for estimating the number of Special Education professional personnel needed for a given year. Table 16 lists several elements which may be used in the model to estimate the need for professional personnel in Michigan public schools in the 1978-79 school year. As shown in Table 16:

Col. A - Special Education teachers employed 1977-8

Col. B - 1973 annual attrition for each category

Col. C - Available positions due to attrition

Col. D - Rate of creation of new positions

Col. E - New positions available

Col. F - Total positions available (C+E) for 1978-79

Col. G - Estimated additional qualified substitute teachers needed for old positions (20% of Col. F)

Col. H - Estimated additional qualified substitutes needed for new positions (16% of Col. E)

Col. I - Total new Special Education teachers needed for 1978-9

Col. J - Total need for Special Education teachers including 10% surplus

Columns A through F illustrate the need for replacement of teachers who leave an existing teaching assignment or who are employed to fill new positions.

A second consideration in estimating the need for Special Education personnel, is to estimate the number of substitute teachers who are needed in order to provide a qualified Special Education teacher to work with handicapped pupils. There is a dearth of information to describe the number and qualifications of substitute teachers who work with Special Education pupils.

In general education, it is estimated that teacher absenteeism is about 8%. Some persons might argue that Special Education teachers are under greater stress than the typical teacher in a general education classroom; therefore, the absenteeism would be greater among Special Education teachers.

Table 15 lists the total number of teachers employed in several Special Education categories in 1978-9. It seems reasonable to assume that the typical substitute teacher would probably want to work only two or three days per week and perhaps less frequently. The economic incentives, e.g., daily pay, retirement and unemployment benefits, would persuade Special Education substitutes to seek the position of a full-time contract teacher if he/she wanted to work five days per week for the entire school year.

There is not a comprehensive report of the number of substitute teachers utilized in Michigan Public Schools. Column "C" of Table 15 provides an estimate of the number of substitutes needed for each Special Education category based upon an assumed 8% rate of absenteeism and two substitutes required for each absent teacher.

There is a commonly acknowledged shortage of qualified substitute teachers for Michigan Schools. Therefore, Column "D" in Table 15 specifies a 20% increase in the number of qualified substitutes needed for each Special Education category. Using the preceding rationale, Colunns G and H in Table 16 indicate the number of qualified professionals needed to serve as substitute teachers for absent personnel in the different categories.

Finally, a third consideration is that it is necessary to produce more teachers than are required to fill the expected

vacancies created by annual attrition, new teaching positions, and the need for qualified substitute teachers for each category of Special Education. A previous study has established that as many as 33% of the newly certified teachers in Michigan will choose not to enter teaching even though there may be many teaching positions for which they are qualified.[1]

Although 33% may be too large for Special Education, it is very probable that at least 20% of the newly endorsed personnel in Special Education will never become full-time teachers in Special Education classes in Michigan.

Moreover, an exact match between expected vacancies and the number of newly certified teachers would intensify the shortages of certain Special Education teaching personnel in several regions of the State. It is an empirical fact of life that a large number of newly certified teachers want teaching positions close to their current permanent residence. Family responsibilities and personal preferences make them unwilling to change permanent residences and go to where the teaching positions exist.

Furthermore, administrators have argued that a modest surplus of available teaching personnel provides them with an opportunity to be selective when they are hiring new teachers and attempting to build a high caliber teaching staff.

The preceding remarks are not intended to provide a rationale for the unrestrained recruiting and training of college students for teaching careers which do not exist. Teacher education

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[1]Gary R. Smith, "Estimating the Number of Newly Certified Teachers Who Do Not Enter Teaching In Michigan Public Schools," Wayne State University, Detroit; August, 1977, 23 p., ERIC Doc. ED 161838.

institutions have an important responsibility to inform students of the employment opportunities in various teaching fields when the students first inquire about admission to a teacher education program. Annual updates of the employment picture and career counseling should be provided to those students who choose to enter teaching and who are accepted into a teacher education program.

Column J in Table 16 provides another estimate of the total need for Special Education personnel in 8 categories. These totals simply represent a 10% surplus of personnel over the corresponding totals listed in Column I.

Recommendations:

1. The accuracy of future studies of the supply and demand for Special Education personnel will be substantially improved by establishing a common coding system so that the data files collected by the Special Education Services and by the Teacher Certification & Professional Development Division of the Michigan Department of Education can be related.
2. There should be a statewide study to determine the extent of absenteeism among Special Education personnel, the qualifications of substitute teachers used in their classes, and an annual census of substitute teachers utilized in Special Education classes in Michigan public schools.

TABLE 1 -SPECIAL EDUCATION PROFESSIONAL PERSONNEL EMPLOYED IN MICHIGAN PUBLIC SCHOOLS (1973-1979)

	1973-4	1974-5	1975-6	1976-7	1977-78	1978-79
Ment. Imp. (SA)	2,245	2,314 (.03)	2,452 (.06)	2,898 (.18)	2,985 (.03)	3,051 (.02)
Speech Cor. (SB)	1,068	1,153 (.08)	1,220 (.06)	1,407 (.15)	1,436 (.02)	1,496 (.04)
Orth.(SC)	194	208 (.07)	219 (.05)	274 (.25)	278 (.01)	279 (.00)
Soc. Work (SD)	796	867 (.09)	943 (.09)	925 (-.02)	936 (.01)	975 (.04)
Emot. Imp. (SE)	767	911 (.16)	1,112 (.22)	1,288 (.16)	1,418 (.10)	1,593 (.12)
Diag. (SF)	288	255 (-.11)	196 (-.23)	174 (-.11)	154 (-.11)	142 (-.08)
Psych. (SG)	196	297 (.52)	398 (.34)	475 (.19)	530 (.11)	562 (.06)
Homebd. (SH)	143	149 (.04)	154 (.03)	171 (.11)	161 (-.06)	157 (-.02)
T.C. Phy. (SI)	151	152 (.01)	140 (-.08)	122 (-.13)	121 (-.01)	106 (-.12)
Blind (SK)	70	79 (.13)	86 (.09)	141 (.64)	153 (.09)	159 (.04)
Deaf (SL)	314	348 (.11)	368 (.06)	440 (.20)	457 (.04)	463 (.01)
Learn Dis. (SM)		122	663 (4.43)	955 (.44)	1,243 (.30)	1,566 (.26)
Train. (ST)	422	469 (.11)	508 (.08	534 (.14)	511 (-.04)	543 (.06)
C. Ment. Hand. (SU)	185	207 (.12)	215 (.04)	208 (-.03)	216 (.04)	231 (.07)
Occupt./Phys. Ther. (NU)	57	91 (.60)	142 (.56)	205 (.44)	220 (.07)	274 (.25)
TOTALS	6,896	7,622 (.11)	8,816 (.16)	10,217 (.16)	10,819 (.06)	11,597 (.07)

Interpretation: In 1973-4 there were 2,245 teachers of mentally handicapped pupils (SA) and in 1974-5 there were 2,314 teachers of mentally handicapped pupils (SA). This was a .03 increase.

TABLE 2 NEWLY EMPLOYED SPECIAL EDUCATION PROFESSIONAL PERSONNEL IN MICHIGAN PUBLIC SCHOOLS (1974-1979)

	1974-5	1975-6	1976-7	1977-8	1978-9
Ment. Imp. (SA)	432	510 (.18)	752 (.47)	484 (-.36)	480 (-.01)
Speech (SB)	234	207 (-.12)	326 (.57)	177 (-.46)	221 (.25)
Ortho (SC)	42	41 (-.02)	101 (.146)	42 (-.58)	27 (-.36)
Soc. Work (SD)	153	167 (-.09)	99 (-.41)	119 (.20)	128 (.08)
Emot. Imp. (SE)	321	394 (.23)	419 (.06)	470 (.12)	377 (-.20)
Diagn (SF)	25	16 (-.36)	13 (-.19)	8 (-.38)	12 (.50)
Sch. Psych. (SG)	93	96 (.03)	111 (.16)	84 (-.24)	96 (.14)
Homebd. (SH)	31	20 (-.35)	48 (1.40)	16 (-.67)	16 (.00)
T.C. Phys (SI)	15	14 (-.07)	11 (-.21)	12 (.08)	6 (-50)
Blind (SK)	18	20 (.11)	69 (2.45)	26 (-.62)	21 (-.15)
Deaf (SL)	68	61 (.10)	179 (1.93)	72 (-.60)	66 (-.08)
Learn. Dis. (SM)	100	492 (3.92)	327 (-.34)	365 (.12)	399 (.09)
Trainable (ST)	103	91 (-.12)	94 (.03)	65 (-.31)	81 (.25)
C.M. Hand (SU)	32	25 (-.22)	14 (-.44)	19 (.36)	21 (.11)
Occupt. Phys. Ther. (NU)	40	63 (.58)	52 (-.17)	58 (.12)	89 (.53)
Not Classified	5	7 (.40)	31 (3.43)	3 (-.90)	3 (.00)
TOTALS	1,712	2,224 (.30)	2,646 (.19)	2,020 (-.24)	2,043 (.01)

Interpretation: The social security numbers of 1974-5 personnel were compared to social security numbers of professional employees in 1973-74. Those not matched were defined as "newly employed." There were 432 newly employed teachers of mentally impaired in 1974-5 and 510 newly employed in 1975-6. This was an .18 increase.

TABLE 3 BEGINNING PERSONNEL* NEWLY EMPLOYED IN 1978-79 IN SPECIAL EDUCATION ASSIGNMENTS

					Degree			Instructional Level				
Speciality	No.	Male	Female	Mean Age (Yr)	BA	MED or Higher	All Grades	Elem	Jr/Hi	Sr/Hi	Other	Mean Salary
Mentally Hand. (SA)	227	46	181	25	221	6	91	66	18	33	19	$11,379
Speech Corr. (SB)	89	5	84	24	47	42	54	32	--	--	3	11,618
Orth. Hand. (SC)	14	0	14	24	14	0	3	7	1	2	1	11,069
Social Worker (SD)	40	9	31	31	6	34	34	2	2	0	2	13,828
Emot. Impaired (SE)	171	25	146	25	166	5	30	69	40	24	8	11,092
School Psychologist (SG)	37	16	21	31	3	34	33	1	0	1	2	13,170
Blind (SK)	8	0	8	25	6	2	6	2	--	--	--	12,891
Hearing Imp. (SL)	30	3	27	23	28	2	5	14	9	1	1	9,997
Trainable (ST)	19	2	17	29	19	0	14	4	1	0	0	11,047
Learn. Disabled (SM)	100	8	92	27	86	14	3	56	20	15	6	10,962
Occup./Physical Therapy (NU)	25	1	24	28	[illegible]	1	19	3	0	1	2	13,381
TOTALS	760	115	645	26	620	140	292	256	91	77	44	$11,510

*Only teachers with primary assignment in special education were included in the analysis

Interpretation: Beginning teachers had no previous teaching experience. There were 227 beginning teachers of mentally handicapped pupils employed in 1978-9. Of this group 46 were male and 181 were female, with an average age of 25 years.

TABLE 4 EXPERIENCED PERSONNEL* NEWLY EMPLOYED IN 1978-79 IN SPECIAL EDUCATION ASSIGNMENTS

Speciality	No.	Male	Female	Mean Age (Yr)	Degree			Instructional Level				Mean Salary
					BA	MED or Higher	All Grades	Elem	Jr/Hi	Sr/Hi	Other	
Mentally Hand. (SA)	236	34	202	30	175	61	70	84	29	35	18	$13,849
Speech Corr. (SB)	124	6	118	31	71	53	76	39	2	0	7	13,824
Orth. Hand. (SC)	12	1	11	29	12	0	6	2	1	2	1	12,618
Social Worker (SD)	87	16	71	35	4	83	69	8	3	3	4	16,000
Emot. Impaired (SE)	151	31	120	30	97	54	34	54	28	17	18	13,967
School Psychologist (SG)	58	30	28	34	6	52	47	1	0	5	5	16,395
Homebound (SH)	10	1	9	30	8	2	9	1	0	0	0	12,125
Blind (SK)	13	1	12	31	9	4	8	4	0	0	1	14,321
Hearing Imp. (SL)	30	2	28	27	23	7	13	8	4	3	2	13,083
Learn. Disabled (SM)	263	26	237	34	108	155	54	123	42	36	8	15,636
Trainable (ST)	57	8	49	32	32	25	52	3	1	0	1	16,161
Occup./Physical Therapy (NU)	64	6	58	32	57	7	55	3	0	1	5	14,799
Consult. Ment. Hand. (SU)	21	5	16	42	6	15	10	5	0	5	1	18,223
TOTALS	1,126	167	959	32	608	518	503	335	110	107	71	$14,838

*Only teachers with primary assignment in special education were included in the analysis

Interpretation: Experienced teachers had one or more years of teaching experience. There were 236 experienced teachers of mentally handicapped pupils newly employed in 1978-9. Of this group 34 were male and 202 were female with an average of 30 years.

TABLE 5 - SPECIAL EDUCATION PROFESSIONAL PERSONNEL EMPLOYED IN 1977-78 IN SPECIAL EDUCATION ASSIGNMENTS IN MICHIGAN PUBLIC SCHOOLS

					Highest Degree			Instructional Level				
	Number	Male	Female	Mean Age Yr.	BA	M.ED or Higher	All Grades	Elem	Jr/Hi	Sr./Hi	Other	Mean Salary
Mentally Hand. (SA)	2,876	735	2,141	35	1,823	1,051	735	1,089	398	476	178	$15,055
Speech Corr. (SB)	1,419	200	1,219	35	652	767	826	499	13	14	67	15,318
Orth. Hand. (SC)	266	37	229	34	162	104	105	112	12	17	20	15,326
Social Worker (SD)	931	300	631	42	62	869	740	114	16	31	30	17,902
Emot. Impaired (SE)	1,379	386	993	31	890	489	277	656	243	139	[illegible]	13,978
Diagn. (SF)	153	76	77	44	8	145	117	12	2	3	19	20,024
School Psychologist (SG)	527	293	234	37	45	482	455	32	6	6	28	17,348
Homebound (SH)	161	34	127	41	82	79	133	11	1	8	8	16,573
Consult Imp. (SI)	119	24	95	41	41	78	65	26	7	15	6	17,126
Blind (SK)	151	24	127	35	76	75	92	34	5	11	9	15,730
Hearing Imp. (SL)	442	51	391	34	274	168	127	202	48	47	18	15,033
Learn. Disabled (SM)	1,179	149	1,030	34	547	632	201	628	174	120	56	14,731
Trainable (ST)	509	104	405	34	352	157	371	87	15	16	20	14,959
Consult. Ment. Hand. (SU)	215	66	149	39	69	146	95	53	22	31	14	17,097
Occup./Physical Therapy (NU)	220	16	204	33	191	29	140	47	8	5	20	13,967
TOTALS	[illegible],547	2,495	8,052	35	5,276	5,271	4,479	3,602	970	939	557	$15,428

Interpretation: Only teachers with primary assignment in special education were included in this analysis. There were 2,876 teachers of mentally handicapped pupils in 1977-8. Of this group 735 were male and 2,141 were female, with an average age of 35 years.

TABLE 6 - AGE DISTRIBUTION OF SPECIAL EDUCATION TEACHERS EMPLOYED IN 1977-78 SPECIAL EDUCATION ASSIGNMENTS IN MICHIGAN PUBLIC SCHOOLS

		Age Ranges (Years)								
	Number	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61 or older
Mentally Hand. (SA)	2,876	478	911	485	243	195	165	177	142	80
Speech Corr. (SB)	1,419	150	472	300	170	107	105	60	39	16
Orth. Hand. (SC)	266	48	87	47	20	13	19	16	8	8
Social Worker	931	8	136	167	140	110	113	122	99	36
Emot. Imp. (SE)	1,379	268	590	243	121	57	50	23	15	12
Diagn. (SF)	153	1	12	24	24	25	29	19	12	7
School Psychologist (SG)	527	14	137	129	69	62	51	41	14	10
Homebound (SH)	161	16	35	17	16	13	13	19	16	16
Consult. P. Imp. (SI)	119	9	13	19	18	18	14	12	11	5
Blind (SK)	151	23	47	29	14	14	9	10	2	3
Hearing Imp. (SL)	442	85	139	79	38	26	37	23	6	9
Learn. Disabled (SM)	1,179	168	407	202	125	84	95	59	27	12
Trainable (ST)	509	70	211	87	40	28	23	19	17	14
Consult. Ment. Hand. (SU)	215	3	45	62	33	19	17	9	14	13
Occup./Physical Therapy (NU)	220	19	95	43	21	16	15	3	5	3
TOTALS	10,547	1,360	3,337	1,933	1,092	787	755	612	427	244

Interpretation: Only teachers with primary assignment in special education were included in this analysis. Of the 2,876 teachers of mentally handicapped pupils, 478 were 21 to 25 years old.

TABLE 7

RETURNING AND NEWLY EMPLOYED PROFESSIONAL PERSONNEL IN SPECIAL EDUCATION ASSIGNMENTS IN MICHIGAN PUBLIC SCHOOLS (1974-79)

	School Year				
	1974-5	1975-6	1976-7	1977-8	1978-9
A. Persons Return from Preceding Year					
Number:	5,960	6,711	7,766	8,989	9,653
Proportion:	(.777)	(.751)	(.746)	(.817)	(.825)
B. Newly Employed Personnel					
Number:	1,712	2,224	2,646	2,020	2,043
Proportion:	(.223)	(.249)	(.254)	(.183)	(.175)
C. Year Totals					
Number:	7,672	8,935	10,412	11,009	11,696
Proportion:	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)

Interpretation: A comparison of social security numbers was used to establish whether a teacher was newly employed or returning from the preceding year. There were 5,960 special education professional personnel employed in 1974-5 who were also employed in 1973-4. This 5,960 represents .777 of the special education staff of 7,672 employed in 1974-75. There were 1,712 or .223 newly employed professional personnel. Col. C totals include persons who became supervisors of Special Education (AY).

TABLE 8 - LOSS OF SPECIAL EDUCATION PROFESSIONAL PERSONNEL OVER 5-YEAR PERIOD

1973-4 Teachers:	1973-4	1974-5	1975-6	1976-7	1977-8	1978-9
Total Present	6,889	5,960	5,275	4,721	4,238	3,863
Proportion Returned	1.00	.87	.77	.69	.62	.56
1974-5 Teachers:						
Total Present		7,610	6,711	5,955	5,292	4,794
Proportion Returned		1.00	.88	.78	.70	.63
1975-6 Teachers:						
Total Present			8,848	7,766	6,811	6,096
Proportion Returned			1.00	.88	.77	.69
1976-7 Teachers:						
Total Present				10,205	8,989	8,064
Proportion Returned				1.00	.88	.79
1977-8 Teachers:						
Total Present					10,815	9,653
Proportion Returned					1.00	.89

Interpretation: In 1974-5 there were 5,960 or .87 of the 6,889 special education professionals employed in 1973-4. In 1978-9 there were 3,863 or .56 of the original 6,889 professionals in special education assignments. This number does not include persons who left and later returned to teaching.

TABLE 8B ATTRITION OF SPECIAL EDUCATION PROFESSIONAL PERSONNEL (1973-1979)

1973-4 Teachers	73-74	74-75	75-76	76-77	77-78	78-79	Cumulative Total
a) Total Return	6,889	5,960	5,418	4,987	4,588	4,307	
b) Percent Return	1.00	.87	.79	.72	.67	.63	
c) Cumulative Not Return		929	1,471	1,902	2,301	2,582	3,026
d) Cum. Freq. to Gen. Educ.		201	326	433	510	592	796
1974-5 Teachers							
a) Total Return		7,610	6,711	6,079	5,551	5,189	
b) Percent Return		1.00	.88	.80	.73	.68	
c) Cumulative Not Return			899	1,531	2,059	2,421	2,816
d) Cum. Freq. to Gen. Educ.			198	370	467	555	702
1975-6 Teachers							
a) Total Return			8,848	7,766	6,952	6,417	
b) Percent Return			1.0	.88	.79	.73	
c) Cumulative Not Return				1,082	1,896	2,431	2,752
d) Cum. Freq. to Gen. Educ.				233	390	542	636

Interpretation: This table includes those professionals who left teaching and returned subsequent year. In special education assignments in 1978-9 there were 4,307 or .63 of the 6,889 special education professionals employed in 1973-4. A cumulative total of 3,026 had left the schools permanently or for one year or more. Of the 3,026, there were 796 persons who were employed in general education assignments.

TABLE 8C ATTRITION OF SPECIAL EDUCATION PROFESSIONAL PERSONNEL (1973-1979)

1976-7 Teachers	73-74	74-75	75-76	76-77	77-78	78-79	Cumulative Total
a) Total Return				10,205	8,989	8,257	
b) Percent Return				1.00	.88	.81	
c) Cumulative Not Return					1,216	1,948	2,141
d) Cum. Freq. to Gen. Educ.					232	409	409
a) Total Return					10,815	9,653	
b) Percent Return					1.0	.89	
c) Cumulative Not Return						1,162	1,162
d) Cum. Freq. to Gen. Educ.						224	224

TABLE 9 PROGRESSIVE ATTRITION OF SPECIAL EDUCATION PERSONNEL EMPLOYED IN MICHIGAN PUBLIC SCHOOLS IN 1973

Special Education Assignment	School Years 1973-4	1974-5	1975-6	1976-7	1977-8	1978-9
Mentally Hand. (SA)	2,245	1,840 (.82)	1,598 (.71)	1,448 (.64)	1,294 (.58)	1,184 (.53)
Speech Corr. (SB)	1,068	915 (.86)	833 (.78)	751 (.70)	695 (.65)	625 (.59)
Orth. Hand. (SC)	194	166 (.86)	142 (.73)	122 (.63)	106 (.55)	95 (.49)
Social Worker (SD)	796	711 (.89)	649 (.82)	576 (.72)	524 (.66)	485 (.61)
Emot. Impaired (SE)	767	604 (.79)	520 (.68)	449 (.59)	398 (.52)	357 (.47)
School Psychologist (SG)	196	170 (.87)	150 (.77)	135 (.69)	124 (.63)	116 (.59)
Homebound (SH)	143	127 (.89)	116 (.81)	110 (.77)	100 (.70)	89 (.62)
Consult. Phy. Imp. (SI)	151	131 (.87)	111 (.74)	100 (.66)	88 (.58)	76 (.50)
Blind (SK)	70	61 (.87)	52 (.74)	49 (.70)	44 (.63)	41 (.59)
Hearing Imp. (SL)	314	276 (.88)	254 (.81)	219 (.70)	198 (.63)	176 (.56)
Trainable (ST)	422	361 (.86)	324 (.77)	296 (.70)	251 (.59)	228 (.54)
Consult. Ment. Hand. (SU)	185	160 (.86)	137 (.74)	115 (.62)	99 (.54)	86 (.46)
Occup./Physical Therapy (NU)	57	50 (.88)	44 (.77)	40 (.70)	35 (.61)	35 (.61)
Learn Disabled (SM)	-	-	651	567 (.87)	494 (.76)	432 (.66)

Interpretation: Data in table do not include count of returning teachers and are based on primary assignment. In 1973-4 there were 2,245 teachers of mentally handicapped. In 1978-9 there were 1,184 or 53% of the 1973-4 group who had remained in special education assignments.

TABLE 10

INITIAL PROVISIONAL CERTIFICATE ENDORSEMENTS IN SPECIAL EDUCATION FIELDS IN CALENDAR YEARS 1977 AND 1978

	Calendar Year			
	1977	1978	Change	Prop. Change
Mentally Handicapped (SA)	704	756	52	7.4%
Speech Correction (SB)	255	241	-14	-5.5%
Orthopedically Hand. (SC)	146	178	32	21.9%
Emotionally Dist. (SE)	447	385	-62	-13.9%
Homebound (SH)	145	172	27	18.6%
Visually Handicapped (SK)	76	85	9	11.8%
Hearing Impaired (SL)	87	105	18	20.7%
Learning Disabilities (SM)	183	168	-15	-8.2%
Special Health Problems (SS)	0	0	0	0
Occupational Therapy (NU)	1	0	-	-
*TOTAL ENDORSEMENTS	2,044	2,097	46	2.3%

Interpretation: In 1978 there were 756 initial provisional certificate endorsements of teacher of mentally handicapped. This was 52 endorsements more than preceding year or 7.4% change.

TABLE 11

NUMBER OF SPECIAL EDUCATION ENDORSEMENTS RECOMMENDED BY MICHIGAN INSTITUTIONS DURING CALENDAR YEAR 1978

Code	Institution	Codes for Special Education Certificates								Total Endors in Sp.Ed.	Pers. Cert. in Sp.Ed
		SA	SB	SC	SE	SH	SK	SL	SM		
2238	Andrews College	0	0	1	0	1	0	0	0	1	1
2243	CMU	223	60	2	137	2	2	1	18	425	408
2259	EMU	211	75	56	221	34	25	56	134	812	672
2268	Grand Valley	146	0	33	123	31	1	17	70	421	236
2273	Hope	1	0	0	5	0	0	0	11	17	12
2282	Madonna	3	1	0	5	0	0	1	53	63	58
2284	Marygrove	16	2	1	17	1	0	1	31	69	58
2290	MSU	143	59	12	87	7	42	34	38	422	361
2298	Nazareth	0	0	0	0	0	0	0	12	12	12
2301	NMU	60	10	0	3	0	0	1	17	91	85
2307	Oakland	56	18	12	65	11	1	10	196	364	293
2314	Saginaw Valley	3	1	2	0	2	0	0	0	8	6
2316	Siena Hts.	1	0	1	0	1	0	0	0	3	1
2323	Univ. of Detroit	3	1	3	3	3	1	0	72	86	74
2325	U of M	46	24	16	56	16	7	9	31	205	163
2329	WSU	188	31	112	66	109	17	13	70	606	347
2330	WMU	104	69	35	86	35	14	1	38	382	324
	TOTALS Mich.	1,205	352	287	874	253	110	140	791	4,012	3,111
	All U.S.	1,404	433	298	921	264	120	168	914	4,522	3,516

Interpretation: In 1978 Central Michigan University (CMU) recommended 223 endorsements for teachers of mentally handicapped (SA). CMU recommended 425 endorsements for 408 persons.

TABLE 12

NUMBER OF SPECIAL EDUCATION ENDORSEMENTS ON INITIAL PROVISIONAL CERTIFICATION RECOMMENDED BY MICHIGAN INSTITUTIONS DURING CALENDAR YEAR 1978

Institution	Granted in Education	Codes for Special Education Certificates								Total Endors. in Sp.Ed.	No.of Pers. Cert. in Sp.Ed.
		SA	SB	SC	SE	SH	SK	SL	SM		
CMU	1,145	128	42	0	72	0	0	0	0	242	235
EMU	822	86	31	33	108	33	24	24	3	342	305
Grand Valley	230	39	0	16	31	15	0	7	15	123	66
Hope	80	0	0	0	4	0	0	0	9	13	10
Madonna	35	0	0	0	1	0	0	0	4	5	5
Marygrove	63	8	0	0	10	0	0	0	1	19	18
MSU	1,192	72	37	1	44	1	28	20	0	203	193
Nazareth	12	0	0	0	0	0	0	0	12	12	12
NMU	294	48	9	0	0	0	0	0	2	59	59
Oakland	189	0	2	0	0	0	0	1	5	8	8
Siena Hts.	31	1	0	1	0	1	0	0	0	3	1
Univ. of Detroit	43	0	0	0	0	0	0	0	11	11	11
U of M	625	16	9	9	12	9	5	4	3	67	52
WSU	470	95	8	79	1	79	9	0	3	274	116
WMU	926	51	41	29	35	29	14	0	3	202	170
TOTALS FOR Michigan		544	179	167	318	163	80	56	71	1,583	1,261
YEAR All U.S.		756	241	178	385	172	85	105	168	2,090	1,632

Interpretation: In 1978 Central Michigan University (CMU) recommended 1,145 initial provisional certificates in education, of which 235 were in special education.

TABLE 13

TYPES OF CERTIFICATES HELD BY EXPERIENCED PROFESSIONAL PERSONNEL WHO WERE EMPLOYED IN SPECIAL EDUCATION CLASSES IN 1977-78

Special Category	Number	Types of Certificates: None Reqd.	Prov.	Perm. Life	Cont.	Vocat	PMT	Prov. Perm. Pend.
Mentally Imp. (SA)	2,874	0	1,324	1,085	420	1	0	44
Speech Corr. (SB)	1,419	0	544	622	236	0	0	17
Otho. Hand. (SC)	266	0	123	101	38	2	0	2
Social Worker (SD)	931	663	11	242	13	2	0	0
Emot. Dist. (SE)	1,379	0	832	283	240	1	0	23
Sch. Psych. (SG)	527	367	23	112	21	0	1	3
Homebound (SH)	161	0	40	101	19	0	0	1
T.C. Phy. Imp. (SI)	119	0	26	85	8	0	0	0
Blind (SK)	151	0	69	56	24	0	0	2
Deaf (SL)	442	0	200	163	74	0	0	5
Learn Dis. (SM)	1,179	0	569	322	261	0	2	25
Trainable (ST)	509	0	288	148	71	0	0	2
Ment. Hand. (SU)	215	0	38	132	44	0	0	1
Occ/Phy Therp. (NU)	220	202	1	3	3	6	4	1
TOTALS	10,392	1,232	4,088	3,455	1,472	12	7	126

Interpretation: This table uses primary assignment only. Of the 2,874 teachers of mentally handicapped pupils, 1,324 had provisional certificates, 1,085 had permanent or life certificates, 420 had continuing certificates, one had a vocational certificate, none had special permit authorization, and provisional or permanent certification was pending for 44 teachers when these data were collected.

TABLE 14

TYPES OF CERTIFICATES HELD BY EXPERIENCED PROFESSIONAL PERSONNEL WHO WERE NEWLY EMPLOYED IN 1978-79 FOR SPECIAL EDUCATION ASSIGNMENTS

Special Category	Number	Types of Certificates						
		None Reqd.	Prov.	Perm. Life	Cont.	Vocat.	PMT.	Prov. Perm. Pending
Occ/Phy Therp. (NU)	64	62	0	0	1	0	1	0
Mentally Imp. (SA)	236	0	149	42	37	0	1	7
Speech Corr. (SB)	124	0	74	30	14	0	0	6
Otho. Hand. (SC)	12	0	10	1	1	0	0	0
Social Worker (SD)	87	72	1	12	1	0	0	1
Emot. Dist. (SE)	151	0	81	25	36	0	0	9
Sch. Psych. (SG)	58	40	5	8	4	0	0	1
Homebound (SH)	10	0	8	2	0	0	0	0
Blind (SK)	13	0	10	2	1	0	0	0
Deaf (SL)	30	0	21	4	3	0	0	2
Learn Dis. (SM)	263	0	96	72	74	0	1	20
Trainable (ST)	57	0	21	11	20	1	0	4
Ment. Hand. (SU)	21	0	5	12	3	0	0	1
TOTALS	1,126	174	481	221	195	1	3	51

TABLE 15 ESTIMATED NEED FOR QUALIFIED SUBSTITUTE TEACHERS IN SPECIAL EDUCATION ASSIGNMENTS

Category	(A) 1977-78 Total Employed	(B) Estim. Daily Absentees (Rate=8%)	(C) Estim. Total Substitutes Needed (2 per Absen)	(D) *Estim. Add Substitute Needed (20% Col C)
Ment. Imp. (SA)	2,985	239	478	96
Speech (SB)	1,436	115	230	46
Ortho (SC)	278	22	44	9
Emot. Imp. (SE)	1,418	113	226	46
Homebd. (SH)	161	13	26	6
Blind (SK)	153	12	24	5
Deaf (SL)	453	36	72	15
Learn. Dis. (SM)	1,243	99	198	40
Trainable (ST)	511	41	82	17
C.M. Hand. (SU)	216	18	36	8

*Apparent shortage of substitute teaching personnel indicates need for substantial number of qualified personnel who will accept substitute teaching positions

Interpretation: Of the total 2,985 teachers of mentally handicapped (SA) employed in 1977-78, a daily absentee rate of 8% indicates 239 teachers absent. An estimated need of 2 substitutes per absent teacher indicates 478 substitutes needed. Apparent shortage of substitutes implies a need for 20% increase in available substitutes.

TABLE 16

ESTIMATING NEED FOR QUALIFIED SPECIAL EDUCATION PROFESSIONAL PERSONNEL FOR 1978-79

Category	(A) Staff Employ. 1977-78	(B) 1973-4 Attrition Factor	(C) Avail. Old Pos.	(D) Avail. New Rate	(E) Avail. New Pos.	(F) Total Perm. Post. Avail. (C&E)	(G) Estim. Add.Sub. Needed	(H) Est.Sub. Need New Post. (10%)	(I) New Spec. Educ. Tch. Needed (F&G&H)	(J) Estim. Need (Col.I+10%) Surplus
Ment. Hand.*(SA, ST, SU)	3,712	.16	594	.03	112	706	121	12	839	923
Speech Corr. (SB)	1,436	.14	201	.02	29	230	46	3	279	307
Orth. Hand. (SC)	278	.14	39	.01	3	42	9	1	52	58
Emot. Imp. (SE)	1,418	.21	298	.10	142	440	46	15	501	552
Homebound (SH)	161	.11	18	-.06	-10	8	6	-1	13	15
Blind (SK)	153	.13	20	.09	14	34	5	2	41	46
Hearing Imp. (SL)	453	.12	54	.04	19	73	15	2	90	99
Learn. Disabled (SM)	1,243	.12	149	.30	373	522	40	38	600	660
TOTALS			1,373		682	2,055	288	72	2,415	2,660

*Mentally Handicapped (SA) now includes trainable teachers (ST) and consultants for mentally handicapped (SU)

Interpretation: There were 3,712 teachers of mentally handicapped in 1977-8. The 1973-4 attrition factor of 16% was estimated to produce 594 available old positions while the new position rate of 3% produced an estimated 112 new positions. There is an estimated need for 121 additional qualified substitutes plus 12 more qualified substitutes to cover new positions. New professionals needed is 839. Column J provides for 10% surplus over minimal need and indicates total need of 923 teachers of mentally handicapped pupils in 1978.